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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,909	11/13/2001	Masao Segawa	216095US2S	6633

22850 7590 06/28/2006

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EXAMINER

DANIELS, ANTHONY J

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/986,909

Applicant(s)

SEGAWA ET AL.

Examiner

Anthony J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/9/2006 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 8,12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanamori et al. (US # 5,153,734).

As to claim 8, Kanamori et al. teaches a method for manufacturing an image pickup apparatus (Figure 12), comprising: an installation step of arranging a first connector (Figure 12,

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CCD reference plate “16”) and an electronic component (Figure 12, CCD “10”) on a wiring board (Figure 12, base plate “19”; *{Soldering is done on base plate “19” – see Col. 5, Lines 49 and 50.}*) and electrically connecting the first connector and the electronic component together (Col. 5, Lines 44-50; *{It is inherent that some sort of electric connection exists between the CCD reference plate and the CCD.}*); and an assembly step performed when the first connector and a second connector are brought into engagement (Figure 12, optical low pass filter holder “29” and lens barrel (not shown – see Kanamori et al., Figures 2 and 3; Col. 3, Lines 60-64) are together the second connector), and including; inserting a photoelectric conversion module, including a photoelectric conversion (Figure 12, CCD “10”).

As to claim 12, Kanamori et al. teaches a method of manufacturing an image pickup apparatus according to claim 8, wherein said positioning member is a pin connected to said second connector (see Kanamori et al., Figure 12, set screws “20”), and wherein said first connector has an opening part configured to receive said pin (see Kanamori et al., Figure 12, nut “22” within low pass filter holder member “22”).

As to claim 13, Kanamori et al. teaches a method of manufacturing an image pickup apparatus according to claim 12, wherein said photoelectric conversion module has a hole configured to allow passage of said pin therethrough (see Kanamori et al., Figure 12, set screws through CCD “10”).

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,4,6,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa (US 2003/0025824) in view of the Japanese Publication to Ogata (JP05-275201).

As to claim 1, Ishikawa teaches an image pickup apparatus (Figure 1) comprising: a first connector arranged on a wiring board (Figure 1, position defining member "3"; *{As seen in Figure 1, the position defining member is located on the printed circuit board "6"}*); a second connector including an optical lens and being engageable with the first connector (Figure 1, optical image pickup system including positioning projections "11"; *{Positioning projections are part of the image pickup optical system "2"}*); a photoelectric conversion module (Figure 1, package "1") including a photoelectric conversion element (Figure 1, solid-state image pickup element "9") which has an electrode located on an optical lens side (Figure 1, electrode portions "4" on lens side of printed circuit board "6") and on which light from the optical lens is incident (Figure 1), said photoelectric conversion module being fixedly held when the photoelectric conversion module is clamped by the first and second connectors in a state where the first and

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second connectors are in engagement and coupled relatively to each other (Figure 1, positioning projections of optical system engaged in positioning holes “10”); and a positioning member (Figure 1, positioning projections “11”) determining relative positions of the first connector, second connector and photoelectric conversion module ([0006]); and an electrode electrically connected to a terminal of the photoelectric conversion module (Figure 1, electrode portions “4”) and located at a position where the first connector is in contact with the photoelectric conversion module (Figure 1), said electrode being electrically connected to the wiring board (Figure 1, electrode portions “4” connected to printed circuit board “6”). The claim differs from Ishikawa in that it further requires that the electrode be a spring electrode.

In the same field of endeavor, Ogata teaches a connection terminal for a chip component on a circuit board (see Purpose). The connection terminal comprising a springy electrode connected to the chip component on the circuit board (Purpose). In light of the teaching of Ogata, it would have been obvious to one of ordinary skill in the art to include the connection method of Ogata in the solid-state image pickup element of Ishikawa, because an artisan of ordinary skill in the art would recognize that such a connection terminal would prevent damage to the circuit board if chip replacement is required resulting in quality improvement (see Ogata, Constitution, Lines 9-12).

As to claim 4, Ishikawa, as modified by Ogata, teaches an image pickup apparatus according to claim 1, wherein said second connector includes a lens barrel (see Ishikawa, Figure 1, optical image pickup system; *{A lens barrel is inherent in the optical image pickup system of Ishikawa.}*).

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As to claim 6, Ishikawa, as modified by Ogata, teaches an image pickup apparatus according to claim 1, wherein said first connector includes a guide which guides the second connector to a predetermined position (see Ishikawa, Figure 1, positioning holes “10” of position defining member “3” (first connector)).

As to claim 9, Ishikawa, as modified by Ogata, teaches a portable electric apparatus comprising the image pickup apparatus defined in claim 1 (see Ishikawa, [0002], “...video camera or a digital camera...”).

As to claim 10, Ishikawa, as modified by Ogata, teaches an image pickup apparatus according to claim 1, wherein said positioning member is a pin connected to said second connector (see Ishikawa, Figure 1, positioning projections “11” are interpreted as the pin), and wherein said first connector has an opening part configured to receive said pin (see Ishikawa, Figure 1, positioning holes “10”).

5. Claims 1,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamori et al. (US # 5,153,734) in view of the Japanese Publication (JP05-275201).

As to claim 1, Kanamori et al. teaches an image pickup apparatus (Figure 12) comprising: a first connector arranged on a wiring board (Figure 12, CCD reference plate “16”); a second connector including an optical lens and being engageable with the first connector (Figure 12, optical low pass filter holder “29” and lens barrel (not shown – see Kanamori et al., Figures 2 and 3; Col. 3, Lines 60-64)); a photoelectric conversion module including a photoelectric conversion element on which light from the optical lens is incident (Figure 12, CCD “10”), said photoelectric conversion module being fixedly held when the photoelectric conversion module is

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clamped by the first and second connectors in a state where the first and second connectors are in engagement and coupled relatively to each other (Figure 12); and a positioning member determining relative positions of the first connector, the second connector and photoelectric conversion module (Figure 12, set screws "20"). The claim differs from Kanamori et al. in that it further requires an electrode located on an optical lens side and a spring electrode electrically connected to a terminal of the photoelectric conversion module and located at a position where the first connector is in contact with the photoelectric conversion module, said electrode being electrically connected to the wiring board.

In the same field of endeavor, Ogata teaches a connection terminal for a chip component on a circuit board (see Purpose). The connection terminal comprising a springy electrode connected to the chip component on the circuit board (Purpose). In light of the teaching of Ogata, it would have been obvious to one of ordinary skill in the art to include the connection method of Ogata in the CCD of Kanamori et al., because an artisan of ordinary skill in the art would recognize that such a connection terminal would prevent damage to the circuit board if chip replacement is required resulting in quality improvement (see Ogata, Constitution, Lines 9-12).

***Note about rejection of claim 1 above (Kanamori et al. in view of Ogata): This combination puts the connection terminal of Ogata in a position within the low pass filter holder member "29". This provides an electrode on the optical lens side of the base plate "19" and located at a position where the first connector is in contact with the photoelectric conversion module.***

As to claim 10, Kanamori et al., as modified by Ogata, teaches an image pickup apparatus according to claim 1, wherein said positioning member is a pin connected to said second connector (see Kanamori et al., Figure 12, set screws "20"), and wherein said first



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connector has an opening part configured to receive said pin (see Kanamori et al., Figure 12, nut “22” within low pass filter holder member “22”).

As to claim 11, Kanamori et al., as modified by Ogata, teaches an image pickup apparatus according to claim 10, wherein said photoelectric conversion module has a hole configured to allow passage of said pin therethrough (see Kanamori et al., Figure 12, set screws through CCD “10”).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa (US 2003/0025824) in view of the Japanese Publication to Ogata (JP05-275201) and further in view of Tamura et al. (US # 5,130,804).

As to claim 2, Ishikawa, as modified by Ogata, teaches a second wiring board including an opening (Figure 1, shield “12” having two parallel sides with opening between those sides); transparent member provided for a major surface of the wiring board and covering both the opening and a photoelectric conversion surface (see Ishikawa, Figure 1, optical image pickup system “2”). The claim differs from Ishikawa, as modified by Ogata, in that it further requires that the photoelectric conversion element provide for a major surface different from that provided for by the transparent member and requires a photoelectric conversion surface that opposes the opening.

In the same field of endeavor, Tamura et al. teaches a wiring board holding camera components (Figure 1). In those components, there exists a lens barrel and CCD element on two opposing sides of the wiring board (Figure 1, CCD “17” and lens barrel “18”) and there further exists an opening between the lens barrel and CCD (Figure 1, opening “35”). In light of the

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teaching of Tamura et al., it would have been obvious to include the CCD and lens barrel at opposing sides of the printed circuit board of Ishikawa, because an artisan of ordinary skill in the art would recognize that this would provide a more compact apparatus (see Tamura et al., Col. 2, Lines 50-57).

**Notes about rejection of claim 2: This combination puts the solid-state image pickup element “9” within the shield “12” and below the printed circuit board “6”. This makes the pickup element oppose the opening and this locates the pickup element at one major surface of the wiring board (inside) where the lens barrel is outside.**

7. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa (US 2003/0025824) in view of the Japanese Publication to Ogata (JP05-275201) and further in view of Takachi (US 2003/0137595).

As to claim 5, Ishikawa, as modified by Ogata, teaches an image pickup apparatus according to claim 1, wherein said second connector includes a lens barrel (see Ishikawa, Figure 1, optical image pickup system; *{A lens barrel is inherent in the optical image pickup system of Ishikawa.}*), said lens barrel has at least one opening which opposes the optical lens (see Ishikawa, Figure 1, opening in middle of optical image pickup system “2”). The claim differs from Ishikawa, as modified by Ogata, in that it further requires that the lens barrel have a diaphragm.

In the same field of endeavor, Takachi teaches an image pickup device including a lens barrel having a diaphragm within it (Figure 2, diaphragm “12”). In light of the teaching of Takachi, it would have been obvious to one of ordinary skill in the art to include a diaphragm in

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the lens barrel of Ishikawa, because an artisan of ordinary skill in the art would recognize that this would provide an effective means to control the amount of light entering the image sensor.

As to claim 7, Ishikawa, as modified by Takachi, teaches an image pickup apparatus according to claim 1. The claim differs from Ishikawa, as modified by Takachi, in that it further requires that said first connector includes an elastic member which urges the second connector toward the first connector when the first and second connectors are brought into engagement and coupled relatively to each other.

In the same field of endeavor, Takachi teaches an image pickup device including engagement claws and an elastic O-ring; the O-ring acting as a biasing member which biases the optical elements towards the sensor package ([0038]). In light of the teaching of Takachi, it would have been obvious to one of ordinary skill in the art to include the engagement claws and O-ring Takachi in the system of Ishikawa, because an artisan of ordinary skill in the art would recognize that this would provide stable support for the CCD and optical image pickup system of Ishikawa.

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362. The examiner can normally be reached on 8:00 A.M. - 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AD  
6/20/2006



LIN YE  
PRIMARY EXAMINER